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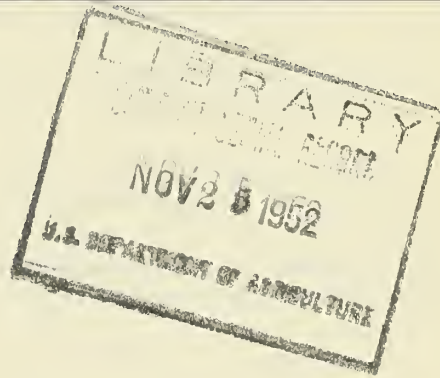
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# MARKETING ACTIVITIES



U.S. DEPARTMENT OF AGRICULTURE  
Production and Marketing Administration  
Washington 25, D.C.

-BY ANY OTHER NAME-

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"Aliases" for crop seed varieties can be confusing, particularly when there are more than a few. Here's what's being done to prevent it.

CURDS AND WEIGHT

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Cauliflower shippers may be paying transportation on too much "excess baggage." Preliminary reports indicate some savings can be made.

TOMATO PREPACKING ECONOMIES

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Dollars can be saved through more efficient labor use in this new segment of the fresh vegetable trade. Here's a report showing how.

CLEANING UPGRADES COTTON

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Modern harvesting equipment causes trashier cotton, but cleaners in gins can improve this situation and improve grades.

TWO HUNDRED YEARS OF "APPERTIZING"

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The bicentennial celebration of the birth of the "Father of Canning" is a good time to review progress in one of our major industries.

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# -By Any Other Name-

By Kirk Miller

Probably nowhere in agriculture does the inventive, if not the poetic, genius of Americans show better than in the naming of our crop seeds and fruits. But, at the same time, these wonderfully descriptive names that are dreamed up--quite often several for the same variety--can be very confusing to the farmer who is going to plant a particular crop.

For instance, practically all home gardeners recognizes Kentucky Wonder as the name of a high-yielding pole-type string bean. But would they also recognize; American Sickle Pole, Egg Harbor, Georgia Monstrous Pole, Improved Southern Prolific, Missouri Prolific, Old Homestead Pole, Texas Pole? All these are aliases of Kentucky Wonder.

Or, to put it another way, if the farmer intends to plant sweet corn, which of these seeds should be selected: Acme Evergreen, Avon Evergreen, Dewolf's Early Acme, Gold Coin Evergreen, Kelly's Hybrid, Large Mammoth Evergreen, Lead-all Evergreen, New England Evergreen, Sugar Evergreen, or White Cob Evergreen? It wouldn't make any difference. All these and 12 others are no more than synonyms for the variety Stowell's Evergreen sweet corn.

To bring some order out of the confusion caused by a number of different names for the same variety of crop seed, the Seed Act Division, Grain Branch, Production and Marketing Administration, USDA, has organized several vegetable and agricultural seed variety committees. These groups are making progress in eliminating use of widely different names for the same variety on seed labels and in advertising.

Among the agricultural crops which typify the problem faced by the committees is U.S. 13 hybrid corn, which goes by at least 100 other names. Other troublesome examples are Midwest soybeans, which have seven other trade names; and Table Queen squash, which goes under six other names, including Acorn, Danish, Individual, and Yama.

True, progress has been slow, but seedsmen and farmers are cooperating. Seed Act Division Chief, Walter A. Davidson, believes that the spade work already is bringing about a better understanding of the problem of misleading names among crop varieties. Mr. Davidson has behind him years of experience in seed work. Following his graduation from North Dakota Agricultural College, he spent two years in charge of field seed certification and seed law enforcement in North Dakota. In 1931 he joined USDA in seed law enforcement work, and became chief of the Seed Act Division in 1940.

So far, only six variety committees have been formed, but it is the hope of the USDA in time to see such groups formed for every vegetable and agricultural crop so that synonymous names for established and recognized varieties will disappear from seed labeling and advertising.

Each committee consists of representatives of the American Seed Trade Association, the State Agricultural Experiment Stations, the Bureau of Plant Industry, Soils and Agricultural Engineering and the Seed Act Division of the Grain Branch, Production and Marketing Administration.

The six kinds of crops on which the variety committees have been working are hybrid corn, soybeans, cabbage, garden beans, sorghum, and hybrid onions.

More cautious labeling and advertising of seed as to kind and variety was stimulated by the passage of the Federal Seed Act of 1939. Under the law, all vegetable seed shipped in interstate commerce is required to be labeled to show the name of the kind and variety. The regulations require that labeling and advertising as to variety name be confined to the "recognized" name.

Agricultural seed need not be labeled as to variety, but if it is done voluntarily, any such labeling is required by regulation to be confined to the "recognized" name.

A variety is defined to be a "subdivision of a kind which is characterized by growth, plant, fruit, seed or other characters by which it can be differentiated from other sorts of the same kind; for example, Marquis wheat, Flat Dutch cabbage, Manchu soybean, Oxheart carrot, etc."

Since 1917 a Suggested Uniform State Seed Law has served as a guide to the States enacting seed labeling laws. The wording of the Suggested Law was changed in 1940 so that its provisions as to variety labeling would be similar to the Federal Seed Act. Most of the States have since changed their laws accordingly. In addition, 10 of the States require the variety name of agricultural seed to be shown on the label, or, in lieu thereof, the words "variety unknown."

Those who sell seeds are faced with much more exacting requirements than they were previous to the passage of the Federal Seed Act of 1939. It is necessary for them to know the variety of their seed in many instances where such knowledge was not previously required.

Further, seedsmen are under obligation to be informed as to what will be "accepted" as the "recognized" variety name. Seed law enforcement agents should be able to provide guidance in these matters, but this is not always easy. Just what constitutes a recognized variety name has long been a troublesome question.

In 1946, the USDA made a move in the direction of providing something definite in the form of guidance as to what would be "accepted" under the Federal Seed Act as "recognized" variety names, when it first established these variety committees.

The variety committees, says the Seed Act Division, need a code of nomenclature such as that adopted by the American Society of Agronomy in 1917, to guide them in their deliberations. The task of the committees would be easier if the State experiment stations and private seed breeders had adhered more closely to that code in the past, particularly to the provisions having to do with eligibility to naming. The code, in part, is worded:

"No variety shall be named unless... DISTINCTLY DIFFERENT from existing varieties in one or more recognizable characters,..."

It should be noted that this provision of the code is in complete accord with the definition of a variety under the Federal Seed Act.

With the development of lists of recognized variety names, seed law enforcement agencies will have overcome one of the principal obstacles which have stood in the way of adequate control of variety labeling and advertising.

An indication that improved cooperation is forthcoming from the seedmen is found in 1947 and 1950 reviews of commercial seed catalogues, together with the number of warnings issued. In 1947, Production and Marketing Administration reviewed 107 seed catalogues and issued 47 warnings. In 1950 there were 137 catalogues reviewed and warnings needed to be sent to only 15 seedmen-publishers.

Of the 47 receiving warnings in 1947, eight claimed to have changed the variety names for the purpose of identifying new strains or varieties. Of the 15 receiving warnings in 1950 only 3 claimed that the purpose was to identify new strains or varieties.

That, the Seed Act Division believes, indicates progress in eliminating confusion in the labeling and advertising of seed and in creating a better understanding among farmers and gardeners of varieties.

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#### 1953 GOALS FOR FRESH SPRING VEGETABLES ANNOUNCED

More fresh vegetables will be available during the months of April, May and June, next year, if recommendations of the U. S. Department of Agriculture are used as guides by producers. The Department has announced acreage goals totaling 501,000 acres for the 17 major spring vegetables, an 8 percent increase for 1953 over the acreage of the same crops harvested this year. At average yields, this acreage is expected to bring about a 3 percent increase in production over 1952.

The only acreage goal for 1953 set below this year is for spinach. Increases have been called for in acreage of lima and snap beans, beets, cabbage, cauliflower, cantaloups, cucumbers, onions, green peppers, tomatoes, and watermelons. Goals equal to the 1952 acreage have been set for carrots, celery, lettuce, green beans, and shallots.

# Curds and Weight

By John C. Winter

Most consumers stopped eating the "greens" or jacket leaves of cauliflower a long time ago, but almost every head of the vegetable, shipped from producing areas to metropolitan markets, still carries a considerable amount of these greens. The reason has been that the leaves furnish a degree of protection to the white "curd" during shipment. Now, research specialists working with the U. S. Department of Agriculture are seeking to determine how much of this "excess baggage" can be eliminated without harm to the product during transportation.

Preliminary findings indicate that shippers of cauliflower may find it possible to double or triple the amount they can pack in shipping containers and thereby lick one of their major problems--the upward trend in crate, labor, and transportation costs.

This study is part of a continuing project carried out by the Container Research Unit of the Western Growers Association on containers, loading and transportation of fresh vegetables and melons under the Agricultural Marketing Act of 1946. The work is done under contract for the Marketing and Facilities Research Branch of the Production and Marketing Administration, USDA, and is now entering its fifth year.

The upward spiral in container, labor and transportation costs naturally has affected all shippers of fresh produce. But, because of the greater bulk of their commodity units, cauliflower shippers probably have felt this problem somewhat more keenly than certain other shippers. For instance, an increase of \$200 per car, in crating, loading and transportation, on a carload of lettuce from the West Coast to New York City would amount to about 1 cent a head on the nearly 20,000 heads of lettuce shipped in the car. However, in a carload of cauliflower, with a little over 5,000 heads, the same increase per car would raise costs about 4 cents per head.

Proceeding on the theory that the most obvious way to reduce the per-head cost of shipping cauliflower was to pack more heads per crate, the Container Research Unit during the past year conducted packing tests to investigate the possibility of putting several layers of heads in the presently used broccoli and lettuce crates.

By taking the weights of cauliflower heads packed in the usual one-layer #405 cauliflower crate, it was found that only about one-third of the head was edible curd; the other two-thirds were accounted for by the jacket leaves. This ratio of one-third curd to two-thirds jacket leaves varied with the variety and growing conditions of the cauliflower studied.

In some cases, it ran as low as one-fourth curd and, in others, as high as one-half curd.

Trimming the tops of the jacket leaves closer to the top of the curd, but not cutting any more of the shank leaves, resulted in a head depth suitable for packing two layers of cauliflower in a lettuce crate. This method reduced the weight of jacket leaves by 15 to 20 percent.

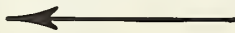
Trimming the tops of the jacket leaves as close as possible to the top of the curd, and also cutting off part of the shank resulted in a cauliflower head that would pack three layers deep in a lettuce crate or two layers deep in a broccoli crate.

It should be stressed that this work involved only packing tests and the bruising observed covered only packing bruising, not transit damage. However, the preliminary work suggests that there is a possibility of substantially reducing the amount of inedible jacket leaves which are currently being shipped to market, without greatly increasing the danger of bruising the curds.

During the coming cauliflower shipping season there will be a follow-up through shipping tests to determine whether the closer trimming of the heads results in increased bruising due to transit shocks and vibrations. If the early tests should show that the closer trimming and the larger number of heads in a crate does increase bruising, it is expected that further experimental shipping tests will be made with a slightly deeper container.



1. Cauliflower pack ordinarily used. A single layer of 11 heads in the crate. Note heavy layer of jacket leaves practically covering curds.



2. Experimental pack: Left is lower layer, butts up; right, top layer with 32 heads in crate.

# Tomato Prepacking Economies

By Donald R. Stokes

Substantial dollar savings through increased labor efficiency are possible in tomato prepackaging plants, it has been found in a study made by the Fruit and Vegetable Branch of the Production and Marketing Administration. A detailed report on the study is now being prepared.

Fruit and Vegetable Branch specialists analyzed 14 plants in the East and Midwest and found that labor efficiency could be increased as much as 36 percent through general adoption of the best methods and practices used in some of the plants in the industry. They estimated that this would bring about an annual savings of close to  $2\frac{1}{4}$  million dollars in the Nation's tomato prepackaging industry.

Most of the savings would arise from more efficient sorting and packaging. But the survey, made under the authority of the Agricultural Marketing Act of 1946, found that some plants, now using manual operations, would find some additional investment in equipment necessary.

## Tray Filling Efficiency

Thirty-seven percent of the direct labor used in the 14 plants was in preparing and filling trays (consumer packages) for market. The most efficient method of filling the mechanically set-up trays was by conveyor belt. As the tray passed down the belt each of two to five operators placed one or two tomatoes in the tray. This method proved better than having one operator completely fill one tray.

Using the partial-tray method, a crew of 10 tray fillers can process 3,970 packages an hour contrasted with an average of 2,880 packages an hour using the complete tray procedure, one person filling each tray.

Sorting the tomatoes according to their degree of ripeness took 26 percent of the direct labor time. The most efficient method of sorting also was by conveyor belts. Two small belts were placed one over another above a large belt. Operators stationed along side the belts sorted the tomatoes not ready for packaging from the large belt onto one of the two smaller belts according to their stage of ripeness. The ripe tomatoes were allowed to pass to the end of the main belt. They then dropped onto another belt which distributed them into bins. This method was used in only one plant. The next most efficient method, sorting from conveyor belt into bins, was used in five plants.

It was more efficient to dump and sort tomatoes received in large jumble-packed containers holding about 60 pounds, rather than in the

standard lug box holding about 32 pounds. The lug box has several disadvantages: the lid must be pried off, fewer tomatoes are handled, and it is necessary to loosen the paper wrappers on the tomatoes prior to their removal by a suction tube or blower.

Prepackagers paid somewhat less for tomatoes received in the 60-pound jumble packed boxes. However, spoilage and mark-down losses were slightly higher in tomatoes received in these larger boxes.

Preparing, filling, and closing shipping containers accounted for 10 percent of the direct labor used.

### Shipping Boxes Studied

Two types of shipping containers were used: a two-piece telescope box and a one-piece self-locking box. The survey found it more efficient to use the one-piece box, but when the two-piece box was purchased already set up less labor was used to fill and close it than to prepare, fill, and close other types of containers.

In another phase of the study, of 423 packages of tomatoes which were purchased in retail stores and examined for condition, approximately 87 percent of them were found in a salable condition. However, a substantial proportion of them were pressure bruised or defective in one way or another. Although only 22 percent of the tomatoes were in perfect condition, only 13 percent of all the tomatoes examined contained sufficiently serious defects--rot, mold or immaturity--to warrant classification as unsalable.

In view of the large percentage of defective tomatoes, the survey recommends that further increase in the efficiency of prepackaging tomatoes should not be achieved at the expense of rougher handling of the tomatoes, which might cause greater deterioration in their average quality.

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### FOOD PROCESSING RESEARCH CONFERENCE

The fifth annual food processing conference of the New York State Agricultural Experiment Station, scheduled for November 12, 1953, will review scientific progress in improved quality and increased production of these products. About 200 research workers from the food processing industry are expected to attend the meeting at the Station in Geneva, N.Y.

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### CORRECTION:

In the story "More Protein Stalls Staling" in the September 1952 issue of MARKETING ACTIVITIES an error crept in. In the second paragraph on page 3, last sentence, "glutamic acid" is used as a synonym for "wheat protein." The words "glutamic acid" should read "gluten."

# Cleaning Upgrades Cotton

By William J. Martin

Modern cotton harvesting machinery saves both time and money in getting the crop out of the fields, but the "trashier" cotton so produced has brought about increased need for improved cleaning equipment and ginning methods if the full value of the crop is to be realized.

The ginning industry is meeting this need with the addition of more overhead cleaning, extracting, and drying equipment in modernized and new gin plants, and with lint cleaners, which are being installed in many gins. Now, an investigation by the U. S. Department of Agriculture has revealed that these cleaning and conditioning facilities at gins are bringing about considerable improvement in cotton quality, particularly in the lower grades--Strict Middling or lower.

These findings are presented in a study entitled "Cotton Ginning Efficiency and Costs in the Rio Grande and Pecos Valleys, Seasons of 1949-50 and 1950-51," made by the Cotton Branch, Production and Marketing Administration. A report on this study by William H. Fortenberry of the Mesilla Park, New Mexico laboratory and Zolon M. Looney of the Stoneville, Mississippi laboratory is being published.

Quality benefits were considered in relation to increased investments in better equipped ginning facilities, potential volume increase, and their influence on cost of operation.

Those plants with elaborate overhead cleaning machinery, including a bur machine and fairly modern gin stands in addition to the drier, were considered to be specially equipped. Those plants with only moderate overhead cleaning and no bur machines are considered to be standard gins.

The study points out that it is essential that ginners receive some economic advantage from added investments in gin machinery, and, at the same time, assure producers of increased returns from better ginning.

Replacement costs for especially equipped gins without lint cleaners were found to average approximately \$87,000 and for standard gins, \$71,000. Installation of lint cleaners added \$12,000 to these costs. As of 1950, actual market values of the gin plants averaged \$52,000 for the specially equipped gins without lint cleaners, \$34,000 for standard plants without lint cleaners and nearly \$85,000 for the specially equipped gins with lint cleaners.

Regardless of the type of lint cleaner used, 54 percent of the cotton grading Strict Middling before cleaning was improved to Good Middling

after cleaning. Fifty-one percent grading Middling was raised to Strict Middling; 74 percent grading Strict Low Middling was raised to Middling; 50 percent of Low Middling was raised to Strict Low Middling, and 40 percent of Strict Good Ordinary was raised to Low Middling.

A net profit of \$5.83 per bale would be realized by subjecting Strict Low Middling cotton to lint cleaning. Comparisons between the saw-cylinder and air-jet types of lint cleaner showed the saw-cylinder type to be slightly more effective in improving grade.

The cost of gin machinery accounted for about 60 percent of total replacement costs, although there were significant variations between gin groups. The percent of total replacement costs represented by gin machinery was 58 percent, 55 percent and 63 percent for specially equipped gins without lint cleaners, standard gins without lint cleaners and specially equipped gins with lint cleaners, respectively, while that for building was 23 percent, 26 percent and 20 percent for the same groups of gins.

With such investments, the report points out, the need for managers well-trained in ginning technology as well as in other related phases of production and marketing is obvious.

Labor costs are shown to be among the most important items in cotton ginning. In 1949 an average of 3 man-hours of labor at an average cost of \$2.60 was needed to gin a bale of cotton, with costs slightly higher the following year.

The number of workers per gin in the area studied, not including management, averaged 10 men, with 6.5 employees on the gin labor force, 1 employee as ginner and an average of 1.5 employees in the office. On the average, total gin labor requirements in the Rio Grande and Pecos Valleys were about the same as for other areas where similar ginning plants are found.

The wide range in labor requirements for gins with like volumes and similar set-ups indicates that real savings could be achieved by many gins through more efficient use of manpower.

With fixed costs making up a substantial portion of total ginning expense, increases in volume have a marked influence on reducing ginning costs per bale. The more elaborate specially equipped gins and the gins with lint cleaners have a substantially higher cost per bale in low volume ranges.

The total revenue per bale averaged \$11.28 for the specially equipped gins and \$10.33 for standard gins in 1949. Revenues were substantially higher the following year, with the specially equipped gins receiving \$12.72 per bale and the standard plants receiving \$12.61. Oddly enough, the specially equipped gins with lint cleaners received only \$11.24 per bale for ginning.

The volume of ginning at which revenue equals ginning costs is in-

fluenced by the degree of efficiency attained in attempting to reduce the costs to a minimum and by the level of ginning charges.

The estimated volumes at which revenue equalled costs in 1949 were 3,988 bales for standard gins and 3,796 bales for specially equipped plants. In 1950, due to higher ginning charges, the "break even" for standard gins was 2,737 bales, and for specially equipped gins, 3,227 bales. The higher costs for specially equipped gins with lint cleaners, coupled with lower revenue, made it necessary for those plants to process 5,123 bales in order to break even.

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#### OTHER IMPORTANT RESEARCH DEVELOPMENTS IN COTTON

Reports on two important research studies on cotton recently have been issued by USDA. One covers a new process which promises to eliminate the bottleneck in cotton fiber testing and the other is a first-time report on quality of cottonseed in the Far West producing area.

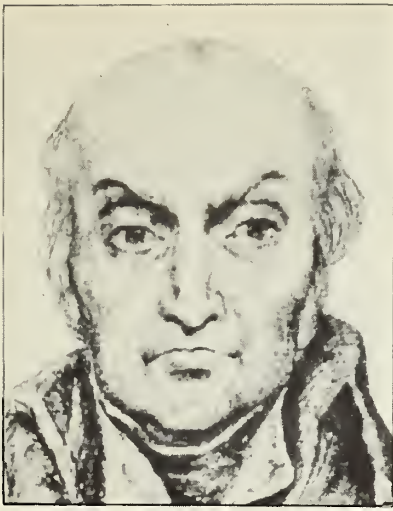
A report entitled "The Causticaire Method for the Determination of Cotton Fiber Maturity and Fineness" describes an improved and more rapid method of determining these factors than is presently used.

Developed and tested successfully in a preliminary way by the Cotton Branch, PMA, the new method consists of taking readings with a Micronaire (instrument now used for measuring fiber fineness) on untreated cotton and on cotton treated with sodium hydroxide, using a new scale called the Causticaire maturity scale. The readings from the two measurements are used in an equation which yields an index of maturity of the fiber. The name "Causticaire" is derived from the chemical, sodium hydroxide, used in the process, and the rate of flow of air through the fiber indicates its fineness and maturity. For maturity tests alone, the new method is considerably quicker than present procedures and gives consistently more accurate results.

A report on "Cottonseed Quality in the Far West, 1951-52" reveals that average quality of seed from upland cotton in that area during the period under study was substantially higher than the average quality for the rest of the country during the preceding five years. Grade differences were attributed to higher oil and ammonia content of seed in the Far West (Western Texas, New Mexico, Arizona, and California).

The study, also made by the Cotton Branch, shows that American-Egyptian cottonseed in the area has an extremely high oil content, averaging over 21 percent. However, the high oil content was offset by a linters content of only 2 percent. Grade variations within particular areas were attributed to weather and other factors rather than to variety.

Both reports are available from the Office of Information Services, Production and Marketing Administration, USDA, Washington 25, D. C.



## Two Hundred Years of "Appertizing"

John R. Deatherage

Nicolas Appert really started something when, in 1809, he discovered a method of preserving foods by heating them in air-tight jars. There may be room for arguing with the Encyclopaedia Britannica, which says that the method is "probably defensible as the greatest of all inventions in historic times." But there can be no denying the fact that Monsieur Appert's discovery improved the nutritional status of people throughout the world by laying the foundation for today's enormous enterprise--the food processing industry.

Appert's discovery climaxed 14 years of painstaking research, during which the obscure French baker-confectioner was spurred on by his convictions and by the hope of winning a prize offered by the French Government. Eventually he succeeded in preserving about 50 foods and testing their keeping quality by shipping them around the world in sailing vessels. For this achievement, Emperor Napoleon Bonaparte presented Appert with the 12,000-franc prize and acclaimed him "Bienfaiteur de L'Humanité."

Just why heating foods imparted keeping quality was as much a mystery to Appert as to everybody else. Louis Pasteur, that other great French "Benefactor of Humanity" who discovered what causes foods to spoil had not been born. Pasteur didn't find out until some 50 years thereafter that bacteria and fungi cause food to go bad, and that heat or other treatment to destroy microscopic growths will prevent spoilage. But causes weren't too important when Napoleon was Emperor; results were.

October 23 was celebrated as Appert's 200th birthday. In reflecting on his distinguished life, there comes to mind a long series of developments which have culminated today in the modern canning industry--developments begot by the "Father of Canning" but scarcely foreseen by him. Monsieur Appert could not possibly have comprehended the full significance of his new method for preserving food. Nor could he have known that part of the then infant "New World" would flourish into one of the great nations of the earth--that one of the foundations of its greatness would be an industry which annually "Appertizes" more than 19 billion cans (equivalent to 15-1/2 billion No. 2 cans) of food--92 pounds or 72 servings per person--retailing at about \$4 billion.

At a time when the infant food freezing industry has bounded ahead from small beginnings, commercial canning also continued to grow vigorously. In 1951 the commercial food pack was 648 million cases, compared with 493 million cases a decade earlier--the per capita consumption, 92 pounds compared with 30 pounds three decades earlier. Since 1935 the consumption of baby foods increased 35-fold. Canned pet food is another fast-coming product.

Canning is essentially an agricultural industry. Most of the Nation's 3500 canneries are located in or close to rural areas. They provided in 1951 a market for 7,404,700 tons of 11 canning vegetables with a farm value of about \$300 million. They bought and packed the production from 1,890,270 acres of these 11 vegetables for which statistics are available--an area 1-1/2 times as big as the State of Delaware. Three crops alone, corn, peas and tomatoes, account for three-quarters of all the acreage of truck crops for canning. Some 2-1/2 to 3 million tons of other farm commodities--meat, poultry, milk, mushrooms, hominy, etc.--are also canned.

Around the turn of the century organized research on food preservation was begun by the U. S. Department of Agriculture. The Department and State Experiment Stations have carried on this research. Most quality standardization and grading work on canned foods by the Department dates from about 1930.

#### Scientific Advances in Canning

Many persons have helped carry canning to its present height by applying biological and chemical science to the "art of preserving," as Appert called it, and by perfecting mechanical improvements which permit economic and sanitary mass production. Nearly all the uncertainties have been removed from commercial canning except those of the weather. Scientists in the Production and Marketing Administration and elsewhere in the United States Department of Agriculture have done their bit toward improving the efficiency of large-scale food canning and the quality of commercially canned products.

Not the least of these advances have come through what is now known as the Food, Drug, and Cosmetic Act. Under this law, the Food and Drug Administration, Federal Security Agency, has set minimum wholesomeness standards and crowded unwholesome canned foods off markets. This has enormously enhanced consumer acceptability of commercially canned foods, and paved the way for industry expansion.

Plant breeders in the USDA Agricultural Research Administration, in the State Experiment Stations and elsewhere have "tailored" many crops to adapt them to the needs of the commercial canner. Through their new varieties and strains, they have produced high-quality products of better size for canning, which retain color and flavor well through the canning process, which can be handled with a minimum of damage, which maintain the right consistency after cooking. These crops also produce heavy yields and in some cases mature a large percentage of the yield at one time. PMA's knowledge of quality standards for both fresh and processed products, gained through years of research, has helped the plant breed-

ers define their objectives, test the new varieties and strains of plants and to select those for further breeding or for adoption by growers.

Much has been learned about the techniques of processing and ways of improving the quality of canned goods and increasing the yields in processing operations. The Agricultural Research Administration and State Experiment Stations have had a significant part in these advancements. For example, in preparing tomato juice, paste, catsup, and the like, rapid heating after the tomato is broken (up to 160 to 210 degrees within a few seconds) destroys the pectic enzymes, gives the product desirable "body" and enhances its "fresh tomato" characteristics.

Improvements in equipment and handling methods naturally have developed in the canning and cannery equipment industries. The Department of Agriculture also has contributed, particularly through its research agencies. Knowledge gained in the laboratory is frequently tested under semi-commercial conditions in the pilot plant. Technicians are gaining a better evaluation of changes that occur at various stages from harvest, through preparation, processing, warehousing, stocking on the grocery shelf to the ultimate point of consumption.

#### PMA Contributes to Canning Progress

Although PMA does not work directly in this field, it is carrying on some corollary studies under the Research and Marketing Act in connection with its inspection functions. It is now developing objective methods of measuring quality factors. For example, PMA has developed, in cooperation with ARA, permanent glass color standards for measuring color of maple sirup and honey. It has developed color comparitors for measuring color of lima beans. The possibility of devising and using photo-electric instruments for measurement of color is being explored at present. Another study has to do with the relationships between official grades of raw commodities and the official grades of the same commodities in canned form. It is not clear that the best grades, raw, yield the maximum quantity and quality when processed. PMA is seeking the answer to these questions, and a better relationship between the two sets of grades. The farmer has an important stake in this type of research, as has the canner, for the grade is an important consideration in setting price.

Among its many services relating to canned foods, PMA (1) inspects raw products for canning, (2) establishes grades for canned foods and describes the standards for these grades in terms of quality specifications, (3) as mentioned above, conducts research work to perfect standards, (4) inspects canned goods and certifies them as to quality. In connection with other work, PMA fosters the organization and operation of community, school lunch, and institutional food preservation centers; determines requirements for tin cans and other materials and facilities needed by the canning trade and cooperates with the defense agencies to obtain them in periods of emergency. During the recent steel strike the food pack was threatened by a tinplate shortage. PMA assisted in making the needed supplies available in time to save the perishable crops.

For years the canning industry has used grades in wholesale trading.

Now consumers are using grades to an increasing extent. Many consumers have decided food preferences and, when income permits, usually will pay premium prices for quality products. Those who must economize want the highest quality available at prices they can pay, but they also want grades adequate in use value for their needs.

PMA grades fill another extremely important need. Disputes occasionally arise between the buyer and seller of canned products as to whether goods delivered meet the specifications of the buyer or representation of the seller. Some disagreements are adjudicated in Court. Whether arbitrated out of Court or adjudicated in Court, the PMA inspector's certificate of grade and condition has the weight of expert evidence.

### Canned Food Grading

U. S. standards have been worked out primarily for producers and distributors, taking into account consumer preferences. PMA grades provide a basis of comparing different degrees of quality. Most of the grades for canned goods are designated A or Fancy, B or Choice or Extra Standard, and C or Standard. These grades describe within specified limits the segments of the quality scale.

In developing standards, the need is determined first. Then all available information is rounded up--variations in the commodity, production and harvesting practices, methods of preparing and processing the raw material, and procedures used in packaging and distributing the product. Technicians who are familiar with the scientific side of fruits, vegetables, dairy and poultry products generally are consulted first. Then canners, dealers, farmers and others express their views. The preferences and prejudices of consumers are taken into account. The grades are then set up and published for study by interested parties. Comments are invited and evaluated. In the light of suggestions received, the grades are finally promulgated for permissive use. From time to time they are reviewed and revised as needs demand.

The fruit and vegetable industry is showing keener interest in producing a better quality pack of processed fruits and vegetables. The size of the pack has reached new high levels in recent years, sometimes at the expense of quality. Consumers have become more interested than ever in (1) having a more uniform product on the market, having higher quality products, and (3) in buying products that have been inspected and certified as to quality.

### Inspection of Canned Foods

To help producers in their marketing and consumers in their buying of canned goods, PMA gives service in inspecting canned goods to assure them an unbiased judgment in terms of U. S. grades--a yardstick of quality. This service is financed by fees paid by those who use the service.

Three methods of accomplishing inspection are offered for canned fruits and vegetables. The more general type consists of making periodic trips to the packer's warehouse, drawing and inspecting representative samples from the pack, and issuing a certificate as to product grade.

The second method, plant inspection pack grading, provides for check on plant sanitation, and preparation of the raw material, and for examining samples of a canned commodity throughout the entire season it is being packed. The inspector then issues certificates covering the entire season's output of that canned commodity.

The third method, similar to the second, is called "continuous inspection." Under it, inspectors are stationed in the plant at all times to observe every phase of the plant's operation in packing its commodities. This service is limited to those canners whose plant facilities meet specific requirements for packing the products concerned and who agree to keep their plants sanitary and to pack uniform, good quality merchandise. The inspector observes the preparation of raw materials, the processing procedures and plant cleanliness, draws and analyzes samples and issues certificates to show the quality of the product and to certify that the product was packed under continuous inspection of the U. S. Department of Agriculture. The processor distributor of these products may then use certain types of information on the labels in addition to the information required by law. He may elect to use a statement of quality, such as "U.S. Grade A" or "U.S. Fancy." ...or the statement, "Packed under continuous inspection of the U. S. Department of Agriculture." Either statement or both may appear in a distinctive shield approved for this type of voluntary labeling.

#### Whole Milk Now "Appertized"

PMA plays an auxiliary part in one of the truly modern adaptations of the Appert process--the canning of sterilized whole milk. For many years the dairy industry has been canning evaporated milk and condensed milk. However, experiments completed by individuals within the dairy industry since World War II revealed the practicability of canning sterilized whole milk so as to retain high quality for a considerable period and meet all the standards of the Food, Drug, and Cosmetic Act. One plant has been in operation on the West Coast for slightly more than a year and two others have been using this process for a shorter period of time. General sanitation is an important requisite of this process. The canners have voluntarily sought impartial supervision of processing by PMA dairy product inspectors. PMA keeps inspectors in the 3 plants, and permits use of the USDA seal on the cans.

In taking stock of the things being done to supply consumers today with a large part of their diets in wholesome, tasty canned foods, it is well to think once again about the man who started it all. In presenting a testimonial to the French Government this month, the President of the National Canners Association summed it up thus: "Appert freed mankind from dependence on the local and annual harvest. His method permits the harvest of the field, the fruit of the orchard, and the catch of the sea to be brought beyond the temporal confines of seasons and the limits of distance to the table of even the poorest."

There can be no doubt about it: Nicolas Appert really started something.

# Marketing Briefs

(The program announcements summarized below are more completely covered in press releases which may be obtained on request from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C. by citing the code number given at the end of each item.)

Cotton.--No marketing quotas or acreage allotments will be required on upland or extra long staple cotton produced in 1953 since total supply of the former is not above "normal." Although supply of extra long staple cotton is above the marketing quota level, no action is being taken because of the strategic value of the commodity. Acreage planted to cotton next year will be considered as part of base acreage in setting future acreage allotments. (USDA 2184-52)

Dairy.--Sale of 1,119,000 pounds of Cheddar cheese by CCC at prices ranging from 41.5 to 43.88 per pound was announced October 1. (USDA 2151-52). Offer to sell the cheese, acquired in price support operations earlier this year, was made in mid-September. (USDA 2055-52)... Changes in Defense Food Order 3 to permit increased imports of cheese and casein have been announced. Certain import controls were terminated, others were revised, including increased quotas for Edam and Gouda cheeses, and all commodities subject to quotas were authorized a 15 percent increase in imports permitted by law in the interest of international trade relations. (USDA 2076-52)... The following actions were taken on milk marketing orders during the past month: Cedar Rapids-Iowa City, Ia., pricing provisions amended to increase differential. (USDA 2199-52). North Texas, increase in Class I milk price differential. (USDA 2112-52). South Bend-La Porte, Ind., higher Class I milk price differentials recommended. (USDA 2217-52). Detroit, several changes relating chiefly to payment and pricing provisions approved. (USDA 2164-52). Central West Texas, issuance of a Federal marketing order for this area approved subject to approval by producers. (USDA 2128-52). Cleveland, amendments recommended to bring price differentials in marketing order up to levels which handlers have been paying producers. (USDA 2135-52). Stark County, Ohio, changes in recommended marketing order for area announced. (USDA 2224-52)

Fats and Oils.--Export restrictions on CASTOR OIL and TUNG OIL will be continued during final quarter of 1952 at same levels allocated for previous quarters. (USDA 2165-52)... Price support program for OLIVE OIL will be continued at \$2.50 per gallon for 1952 crop. (USDA 2067-52)

Fruits and Vegetables.--New U. S. Standards have been announced for grades for Florida TANGERINES. (USDA 2028-52). Revised U.S. Standards have been announced for the following: SHELLED ALMONDS (USDA 2108-52); DRIED CURRANTS (USDA 2032-52); SHELLED PECANS (USDA 2034-52). Revision of standards have been proposed for: CANNED MUSHROOMS (USDA 2235-52); FROZEN DICED CARROTS (USDA 2033-52); CANNED GRAPEFRUIT (USDA 2145-52). Marketing agreement actions taken during the month included: Announcement that a referendum will be held later on continuation of Georgia PEACH program. (USDA 2181-52). A proposal to revise grade requirements for surplus almonds. (USDA 2074-52). Salable and Surplus percentages for the

marketing of the following crops: RAISINS (USDA 2236-52); WALNUTS (USDA 2172-52); FILBERTS (USDA 2063-52); DRIED PRUNES (USDA 2208-52); earlier it was announced that no export payment program for prunes during the 1952-53 marketing season is planned. (USDA 2036-52). Purchases for the school lunch program have been announced for the following commodities: Canned GREEN SNAP BEANS and GREEN PEAS (USDA 2075-52); Canned TOMATOES and TOMATO PASTE (USDA 2085-52); Canned PEACHES (USDA 2154-52). A diversion program for surplus dried figs has been announced. (USDA 2095-52). Study of the CITRUS marketing situation in Western Europe in the interest of the American industry has been scheduled. (USDA 2068-52)

Grain and Feeds.--A price support level for 1952-crop corn at a national average price of \$1.60 per bushel, 90 percent of October 1 parity has been announced. Support levels for the 1951 crop averaged \$1.57 per bushel. (USDA 2155-52)... USDA has awarded contracts for exhaust or blower fan assemblies for cooling and ventilating grain in Government-owned storage structures. (USDA 2243-52)... CCC has contracted for purchase of 35 storage structures for use in the Virginia peanut producing area so that farmers can participate in the price support program for that crop. (USDA 2242-52)... USDA has purchased 202,000 cwt. of rice for overseas use by the Army (USDA 2251-52), and 15,500,000 pounds of flour for export to Formosa (USDA 2037-52)... CCC has approved a contract with a New York export-import firm for barter of 975,000 bushels of CCC wheat for 42,500 metric tons of ammonium sulfate for fertilizer which is to be exported to Formosa. (USDA 2096-52)... Plans for continuation of the emergency hay program under an increased maximum of \$8,000,000 set by the President has been announced. (USDA 2241-52)

Poultry.--Under a surplus removal program, USDA, through October 15 had purchased 10,946,000 pounds of frozen ready-to-cook TURKEYS. The turkeys will be delivered during November and December to school lunch programs. (USDA 2249-52). Earlier, the purchase program was changed to permit offers of turkeys twice a week during October. (USDA 2153-52)

Tobacco.--Marketing quotas have been proclaimed and referendums for MARYLAND TOBACCO (USDA 2146); CIGAR FILLER and BINDER (types 42-44 and 51-55) TOBACCO (USDA 2157-52); and PENNSYLVANIA CIGAR-FILLER TOBACCO, type 41, (USDA 2156-52)... Prices support loan levels for 1952-crops of BURLEY, FIRE-CURED, DARK AIR-CURED, VIRGINIA SUN-CURED, and PUERTO RICAN FILLER TOBACCOS have been announced. (USDA 2175-52)

Sugar.--USDA has announced "fair and reasonable prices" for 1952-crop Louisiana sugarcane, the minimum price which a processor there must pay to be eligible for government payments under the Sugar Act of 1948. (USDA 2134-52)... The September 1 balance of the "full duty" sugar quota has been reassigned to increase the quantities of sugar that may be imported into the U.S. from Colombia, Costa Rica, Dominican Republic, Haiti, Netherlands, Peru, and the United Kingdom. (USDA 2041-52)

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Price-support program loans and inventories of CCC, as of August 31, amounted to \$1,714,278,000 after a net realized loss of \$8,629,000 in operations of the program the first two months of the current fiscal year.

## ABOUT MARKETING

The following addresses and publications, issued recently, may be obtained upon request. To order, check on this page the publications desired, detach and mail to the Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

### Publications:

U. S. Standards for Florida Tangerines (Effective October 18, 1952). September 24, 1952. 11 pp. PMA (Processed)

U. S. Standards for Shelled Almonds (Effective October 30, 1952). October 6, 1952. 9 pp. PMA (Processed)

Poultry Farm Practices and Egg Quality. Marketing Research Report No. 22. May 1952. 28 pp. PMA (Printed)

Wholesale Prices of Fresh Fruits and Vegetables and Auction Prices of Fresh Fruits at N.Y. City and Chicago. (Aug. 1952) 40 pp. PMA (Printed)

U. S. Standards for Grades of Dried Currants (Effective October 20, 1952). September 15, 1952. 6 pp. PMA (Processed)

U. S. Standards for Shelled Pecans (Effective October 19, 1952). September 24, 1952. 11 pp. PMA (Processed)

Market Outlets for Cotton In Some of the Principal Cotton Fabrics, Supplement 1, Marketing Research Report No. 25. September 1952. 77 pp. PMA (Processed)

Canning in Glass Jars in Community Canning Centers, Agriculture Handbook No. 44, July 1952. 29 pp. PMA (Printed)

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